



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
IN THE BOARD OF APPEALS AND INTERFERENCES

In re application of:	David E. Hirth	§	Examiner:	Frank Tsai
Patent No.:	6,079,496	§	Group Art Unit:	3672
Serial No.:	09/939,227	§	Docket No.:	D5407-25
Filing Date:	August 24, 2001	§		
Title:	Reduced Shock Landing Collar	§		

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APPELLANT'S BRIEF

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I. Real Party in Interest

The real party in interest is Baker Hughes Incorporated.

II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of the Claims

Claims 1-36 are pending.

Claims 1-20 are the issued claims from U.S. Patent 6,079,496 (“the ‘496 patent”).

Of these 20 claims 1-6 and 15-20 are allowed, claim 7 is finally rejected under 35 U.S.C. §102(b) in view of O’Brien U.S. Patent 4,427,070 (“the ‘070 patent”) and claims 8-14, which depend from rejected claim 7, are objected to as being dependent on a rejected base claim but would be allowable if rewritten in independent form to include the base claim limitations and any other limitations of intervening claims.

The reissue application included a Preliminary Amendment adding claims 21-36. These claims are finally rejected solely under 35 U.S.C. §251 on the basis of a claimed violation of the rule of recapture.

None of the claims have been amended during prosecution of the re-issue application that is the basis of this appeal.

IV. Status of Amendments

An Amendment is now proposed to claim 7 to correct it to the form it should have had when it was pending claim 5, in the original application leading to the ‘496 patent, and was improperly amended leaving off its last line. Appellant’s counsel just realized this error when reviewing the prosecution histories in preparation of this Brief. It is

believed that entering this Amendment should be one ground of overcoming the anticipation rejection of this claim in view of the '070 patent

V. Summary of the Invention

The filing of the reissue application was prompted by the realization that the invention claimed in claims 1-20 of the '496 patent and described in its abstract was one facet of the invention. The operation of this invention can be found in detail in the specification of the '496 patent at Column 3 lines 34-67.

These claims (1-20) relate to a landing collar 12 shown in Figure 1. An object, such as a ball 70 lands on the seat 28. When pressure builds on ball 70 it raises the pressure in the surrounding chamber 42. When enough pressure builds in chamber 42, the rupture disc 56 breaks and fluid exists through an orifice 54 to control the rate of movement of sleeve 30 that is connected to piston 34. As such movement occurs, the trapezoidal openings 22 allow flow into annular space 24 to relieve the pressure above ball 70 gradually as to avoid shocking the formation below.

This broadening re-issue was filed within two years of the issuance of the '496 patent and for the reason given in the inventor's re-issue declaration. That reason is that another aspect of what David Hirth invented was a substantially non-metallic landing collar independent of any movement regulation feature. The purpose of landing collars is described in the specification Column 1 Lines 1-21. The device accepts an object for pressure buildup to operate a downhole tool and is subsequently drilled out to allow access to the full bore of the tubular. What Mr. Hirth also invented was a non-metallic landing collar that could facilitate subsequent removal for full access to the full bore of the tubular. An embodiment of this invention is shown in Figure 7 and described in

Column 4 lines 21-44 and Lines 54-62. The preferred embodiment of this invention of the non-metallic landing collar could incorporate a reduced shock feature using a reservoir 100 whose volume is reduced by pressure on ball 114 until the rupture disc 112 breaks and fluid is displaced through the narrow passage 110 to reduce shock as pressure is relieved through the elongated unnumbered openings in body 118. However, the non-metallic nature of the landing collar is the broad scope of the invention independent of the reduced shock feature.

There is no known device for selective obstruction of a tubular that subsequently allows full bore access to the tubular to be quickly obtained by using a substantially non-metallic construction for the body, as claimed in claim 21. No art rejections of claims 21-36 have been made by the Examiner despite two opportunities to do so.

VI. Issues

1. Is claim 7, which was allowed in the '496 patent over O'Brien U.S. Patent 4,427,070 ("the '070 patent") and again allowed in this re-issue application in the office action mailed November 19, 2001, anticipated under 35 U.S.C. §102(b) by that reference?

2. Can the rule of recapture under 35 U.S.C. §251 even apply to claims 23-33, which already feature, in claim 23, the movement regulation feature in even narrower form than claimed by the Examiner as the feature surrendered by amendment in prosecution of the application leading to the '496 patent?

3. Is the rule of recapture avoided for claims 21-36 because they claim a separate invention that does not even include a movement regulation feature in claim 21, such that even if there was any surrender in prior prosecution of the '496 patent, it

becomes irrelevant, when the claimed narrowing by amendment in prosecution of the '496 patent is to a feature not present in claim 21?

VII. Grouping of Claims

Claim 7 stands alone as the only claim rejected on the prior art. Claims 23-33 stand together on the basis that the recapture rule does not even apply to them as they all include a narrower form of the movement regulation feature leaving nothing that could be recaptured by omission. Claims 21-22 and 34-36 stand together because these claims do not have a movement regulation feature making the recapture rule inapplicable because the element where the surrender allegedly took place is not in the claims at all.

VIII. Argument

A. Claim 7

Claim 7 is rejected as anticipated under 35 U.S. C. §102(b) over the O'Brien '070 patent. This claim is repeated in full below along with claims 1-3 to facilitate Appellant's argument.

1. An apparatus for selective pressure build-up in a tubular, comprising:

seat assembly comprising a seat supported by a movable body, said seat adapted to receive a member thereon to obstruct the tubular for pressure build-up;

said seat assembly movable between a first position, where the tubular may be obstructed by said member, and a second position, where flow past said seat and member can occur; and

a movement-regulating device operable on said seat assembly to selectively regulate **the rate of** movement from said first to said second position.

2. The apparatus of claim 1, wherein:

said regulating device prevents movement of said seat assembly until a predetermined range of applied pressure is exerted on said seat assembly.

3. The apparatus of claim 2, further comprising:

a housing defining a fluid chamber adjacent said seat assembly;
said seat assembly movably mounted to said housing such that movement
of said seat assembly changes the volume of said fluid chamber.

7. An apparatus for selective pressure build-up in a tubular,
comprising:

a seat assembly comprising a seat supported by a movable body,
said seat adapted to receive a member thereon to obstruct the tubular for
pressure build-up;

said seat assembly movable between a first position, where the
tubular may be obstructed by said member, and a second position, where
flow past said seat and member can occur; and

a movement-regulating device operable on said seat assembly to
selectively regulate movement from said first to said second position;

said regulating device prevents movement of said seat assembly
until a predetermined range of applied pressure is exerted on said seat
assembly;

a housing defining a fluid chamber adjacent said seat assembly;

said seat assembly movably mounted to said housing such that
movement of said seat assembly changes the volume of said fluid
chamber.

Issued claims 1, 2, 3, and 7 corresponded to original claims 1, 2, 4, and 5,
respectively. Appellant has just noted an error in claim 7 above that stemmed from an
omission of the substance of original claim 5, when original claim 5 was rewritten in
independent form in an Amendment mailed 12/22/99. As seen in the top of page 3 of that
amendment, the rewritten claim 5 is **missing the following phrase,**

“said fluid chamber has an outlet with a removable barrier mounted in said
outlet”

and that very phrase **appears out of place** on page 3 of that Amendment, below the
amendment to claim 13.

Applicant submits with this Brief a separate request to amend claim 7 to give it
the proper scope originally intended when claim 5 was rewritten in independent form. If
the Board could give the Examiner the opportunity to enter this Amendment, or, in the

alternative, if the Board enters the Amendment as one directed to a ministerial issue, then resolution of the rejection of pending claim 7 (formerly claim 5) can be quickly resolved.

During prosecution of this reissue application, in the first action the only rejection to the claims was under §112. In the next action, the Examiner re-discovered the '070 reference (it was of record in the '496 patent) and rejected claims 1,2, and 4 while claim 5 was found allowable. In the Amendment mailed 12/22/99 responsive to the Office Action mailed September 23,1999 the language in bold in issued claim 1 above was added. Appellant's counsel, when attempting to put claim 5 into independent form, omitted the substance of original claim 5 quoted above. When improperly rewritten claim 5 issued as claim 7, it was also missing that one line from claim 5. At present, the only difference between issued claims 1 and 7 is the phrase "the rate of" added to claim 1 and it is this difference that the Examiner focuses on to reject claim 7. In effect claim 7 is now broader than claim 1, but that was not the intent during prosecution of original claim 5.

However, with the added phrase to claim 7, as indicated in the attached amendment, there will be a material difference between these claims along the lines the Examiner initially recognized when he allowed claim 5 in view of the '070 reference. It is respectfully submitted that when claim 7 is amended to have the scope intended for claim 5 in prosecution of the original application, that the Examiner will maintain his position that such a claim is not anticipated over the '070 patent. Appellant's counsel sincerely apologizes for the needless confusion caused by the incorrect rewriting of original claim 5. Claim 7, after amendment, noted in bold, should read as follows,

7. An apparatus for selective pressure build-up in a tubular, comprising:

a seat assembly comprising a seat supported by a movable body, said seat adapted to receive a member thereon to obstruct the tubular for pressure build-up;

said seat assembly movable between a first position, where the tubular may be obstructed by said member, and a second position, where flow past said seat and member can occur; and

a movement-regulating device operable on said seat assembly to selectively regulate movement from said first to said second position;

said regulating device prevents movement of said seat assembly until a predetermined range of applied pressure is exerted on said seat assembly;

a housing defining a fluid chamber adjacent said seat assembly;

said seat assembly movably mounted to said housing such that movement of said seat

assembly changes the volume of said fluid chamber;

said fluid chamber has an outlet with a removable barrier mounted in said outlet.

Responding substantively to the §102(b) rejection, the Examiner tries to find, in the '070 reference, a fluid chamber whose volume changes when the seat assembly moves by stating:

“The housing and the chamber fail to structurally distinguish from the tubular structure 10 and the internal space located near the seat assembly shown in the respective drawings”

With due respect, there is simply no chamber whose volume changes when the seat 78 and ball 80 of the '070 reference move down, as seen by comparing Figures 2 and 3. There is a constant annular volume between the valve element 32 and the housing 12 that surrounds it. This volume doesn't change because shear pins 54 are broken. Rather, the chamber shifts downwardly while maintaining its same volume. On top of this difference, the correction of claim 7 to the scope it was intended to have when original claim 5 was rewritten in independent form, lends another degree of separation from the '070 reference. The '070 reference simply has no removable barrier in an outlet to a

chamber whose volume changes since it doesn't even have the chamber with a changing volume. Claim 7 was and now is even more unique over the '070 reference and should be allowed, including the amendment proposed to it.

B. Claims 23-33

Appellant's position with regard to these claims is that the rule of recapture does not apply because they are narrower in all respects pertinent to the asserted surrendered subject matter. To better illustrate Appellant's point, claims 1, 15 and 21-23 are juxtaposed below, with the language in bold in claims 1 and 15 being the language added to argue around the §102 rejection using the '070 reference during prosecution of the '496 patent.

1. An apparatus for selective pressure build-up in a tubular, comprising:

a seat assembly comprising a seat supported by a movable body, said seat adapted to receive a member thereon to obstruct the tubular for pressure build-up;

said seat assembly movable between a first position, where the tubular may be obstructed by said member, and a second position, where flow past said seat and member can occur; and

a movement-regulating device operable on said seat assembly to selectively regulate **the rate of** movement from said first to said second position.

15. An apparatus for selective pressure build-up in a tubular, comprising:

a housing;

a seat assembly mounted to said housing and defining a fluid chamber, said fluid chamber having an outlet and an obstructing member in said outlet;

said seat assembly further comprising a seat which, when obstructed and subjected to a predetermined range of pressure within the tubular, causes said seat assembly to, in turn, increase fluid pressure in said chamber to overcome said obstructing member, which allows movement of said seat assembly **at a controlled rate** from a first position, where the tubular is obstructed, to a second position, where flow past said seat assembly is established.

21. An apparatus for selective obstruction on a tubular by holding an object placed thereon, to allow pressure buildup in said tubular, comprising:

a non-metallic body mounted in the tubular having a passage there-through and further comprising a seat surrounding said passage to accept the object, to allow for selective pressure buildup above said body, said non-metallic construction of said body facilitating rapid removal thereof for subsequent full bore access through the tubular.

22. The apparatus of claim 21, wherein:

said body is made from a plurality of non-metallic components movable with respect to each other responsive to a predetermined force on the object when engaged to the said seat.

23. The apparatus of claim 22, wherein:

relative movement of said non-metallic components is regulated by displacement of fluid from a cavity, defined at least in part by said components, through an outlet which presents a flow restriction.

Claim 23 includes a movement regulation feature involving displacing fluid from a cavity that is defined in part by the components, which are the body and the seat mounted in the tubular. Relative movement is between the non-metallic components of the body. The displaced fluid has to go through an outlet, which presents a flow restriction to control the stated relative movement.

During prosecution of the initial application leading to the '496 patent the broadest claims 1 and 13 were amended as shown above and issued in the '496 patent as claims 1 and 15. Claim 1 recites a movement regulation device that controls the rate of movement of the seat assembly between two positions. There is no structure recited on how this is done in claim 1. Clearly, claim 23 is narrower in scope as to the precise element where the "alleged" recapture is claimed to have occurred. The last element of claim 1 was the only element amended to get claim 1 of the '496 patent to issue. That movement regulation element is narrower in claim 23 than in claim 1:

“Reissue claims that are broader in certain respects and narrower in others may avoid the effect of the recapture rule. If a reissue claim is broader in a way that does not attempt to reclaim what was surrendered earlier, the recapture rule may not apply. However, in this case, the reissue claims are broader than the original patent claims in a manner directly pertinent to the subject matter surrendered during prosecution. Mentor thus attempted to reclaim what it earlier gave up. Moreover, the added limitations do not narrow the claims in any material respect compared with their broadening.” *Mentor Corp. v. Colorplast Inc.* 998 F.2d 992; 27 U.S.P.Q.2D (BNA) 1521(Fed. Cir. 1993)

Claim 23 significantly narrows the amended movement regulating device that was amended in claim 1 to add the regulation of rate feature, by providing additional structure for that element not found in claim 1. Using claim 1 as the yardstick, there is no recapture rule impact as to claim 23 and the claims that depend from it 24-33.

The same result obtains if the benchmark claim is claim 15. Claim 15 recites a chamber that has pressure built up in it to overcome an obstructing member to allow movement at a regulated rate between a first and second position. Here again claim 15, the element that was amended to get the ‘496 patent to issue is presented in primarily functional terms with the only structure recited being the chamber and the obstructing member. Even the amendment to this claim, the phrase “at a controlled rate”, is principally a functional recitation. Claim 15 does not exactly disclose how the regulation occurs. Claim 23 is more specific stating that regulated movement occurs by relative movement of parts of the body relative to each other, which results in forcing fluid from a chamber through a flow restriction. Claim 23 is narrower than the movement element amended in claim 15 to allow it to issue in the ‘496 patent. Under the rationale of *Mentor* recited above for claim 1, the recapture rule does not come into play because claim 23 is narrower in all respects. Claim 23 also has the non-metallic feature on the body parts that

move with respect to each other, making it narrower than the un-amended elements of claims 1 or 15 that have no such features.

“In both Mentor and Ball, the relevance of the prior art rejection to the aspects narrowed in the reissue claim was an important factor in our analysis. From the results and reasoning of those cases, the following principles flow: (1) if the reissue claim is as broad as or broader than the canceled or amended claim in all aspects, the recapture rule bars the claim; (2) if it is narrower in all aspects, the recapture rule does not apply, but other rejections are possible; (3) if the reissue claim is broader in some aspects, but narrower in others, then: (a) if the reissue claim is as broad as or broader in an aspect germane to a prior art rejection, but narrower in another aspect completely unrelated to the rejection, the recapture rule bars the claim; (b) if the reissue claim is narrower in an aspect germane to prior art rejection, and broader in an aspect unrelated to the rejection, the recapture rule does not bar the claim, but other rejections are possible. Mentor is an example of (3)(a); Ball is an example of (3)(b).” *In re Clement* 131 F3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997)

Accordingly, a unique reason to not apply the recapture rule to claims 23-33 is presented. These arguments and the section below, which also applies to claims 23-33 as well as the balance of the claims rejected on the recapture rule citing 35 U.S. C. §251, are sufficient to reverse the decision of the Examiner and to allow claims 23-33.

C. Claims 21-22 and 34-36

Appellant’s argument as to these claims can be summed up simply. The recapture rule does not apply when the reissue claims are addressed to a wholly different invention that does not even include the elements amended in the claims of the original patent. Where recapture does apply is if the reissue claims still include the same element that was previously amended but without the narrowing limitations previously inserted during the initial prosecution. Additionally, if the previous limitations to that same element are omitted, new limitations on that same element that fail to make it narrower than that element was in the previously issued claim will still result in a violation of the recapture

rule. Neither of these circumstances where the recapture rule applies are present in this appeal.

This proper application of the recapture rule to the facts in this case is illustrated in *B.E. Meyers & Co. Inc. v. U.S.* 47 Fed. Cl. 200, 56 USPQ2d 1110 (Ct. Cl. 2000). The original claims had a pulsing circuit element that was amended to get around cited art. In the reissue claims reference to the pulsing diode and pulsing current limitations were all removed to protect another invention, as determined by the Examiner, that was focused on a lens system and had nothing to do with any type of pulsing circuitry. A quote from this case is illustrative,

During the course of prosecuting its reissue claims, plaintiff contended, and the PTO examiner ultimately agreed, that a lens apparatus that produced a beam with a well-defined peripheral edge was in fact a separate invention eligible for patent protection, independent of whatever type of pulsing circuitry might be used in combination with the lens system in any particular device. In order to receive protection for this aspect of its invention, plaintiff had to delete any reference to pulsing circuitry in the reissue claims. Of course, in doing so, plaintiff deleted the specific pulsing diode and substantial pulsing current limitations that had been added to its original claim to distinguish the prior art.

Contrary to defendant's argument, plaintiff's deletion of the pulsing diode and substantial pulsing current limitations did not effect an improper recapture of surrendered subject matter. The subject matter protected in the new independent reissue claims dealt only with the lens system; it had nothing to do with any type of pulsing circuitry. During the original patent prosecution, the examiner made plaintiff aware that it could not receive protection for its basic pulsing circuit design because such pulsing circuitry was already taught by the prior art. In this regard, nothing changed after the reissue process. Plaintiff still cannot rely on its reissue claims to protect any type of pulsing circuit design that is taught by the prior art, and therefore plaintiff has not used the reissue process to improperly recapture subject matter surrendered during the original prosecution. *B.E. Meyers & Co. Inc.*, supra, at 220-221

Cases from the Court of Claims are binding precedent on the Court of Appeals for the Federal Circuit. *South Corp. v. U.S.*, 690 F.2d 1368, 1370, 215 USPQ 657, 658 (Fed. Cir. 1982).

Application of the doctrine of the *Meyers* case is simply seen from a comparison of claims 1, 20 and 21, which are repeated below. The bold indicates only claim 1 was amended; claim 20 was simply rewritten in independent form, without amendment. Claim 21 was never amended.

1. An apparatus for selective pressure build-up in a tubular, comprising:

a seat assembly comprising a seat supported by a movable body, said seat adapted to receive a member thereon to obstruct the tubular for pressure build-up;

said seat assembly movable between a first position, where the tubular may be obstructed by said member, and a second position, where flow past said seat and member can occur; and

a movement-regulating device operable on said seat assembly to selectively regulate **the rate of** movement from said first to said second position.

20. An apparatus for selective pressure build-up in a tubular, comprising:

a seat assembly comprising a seat supported by a movable body, said seat adapted to receive a member thereon to obstruct the tubular for pressure build-up;

said seat assembly movable between a first position, where the tubular may be obstructed by said member, and a second position, where flow past said seat and member can occur; and

a movement-regulating device operable on said seat assembly to selectively regulate movement from said first to said second position;

the entire seat assembly is nonmetallic;

a substantial portion of said movement-regulating device is non-metallic.

21. An apparatus for selective obstruction on a tubular by holding an object placed thereon, to allow pressure buildup in said tubular, comprising:

a non-metallic body mounted in the tubular having a passage there-through and further comprising a seat surrounding said passage to accept the object, to allow for selective pressure buildup above said body, said

non-metallic construction of said body facilitating rapid removal thereof for subsequent full bore access through the tubular.

Claims 1 and 20 are presented to show the Examiner's recognition that the non-metallic feature was a separate invention from the movement regulation feature. When claim 1 was rejected over the '070 O'Brien reference, it was worded identically to claim 20, but for the last two lines of claim 20. This means that the Examiner, by rejecting claim 1 as filed and allowing claim 20, believed that claim 1 as filed was anticipated by the '070 reference, but claim 20 that had all the same language and the last two lines about the non-metallic nature of the elements was patentable over the '070. Claim 20 was never amended (other than rewriting it in independent form) and no arguments were made on its behalf during prosecution leading to the '496 patent. Nothing was surrendered from this claim to be recaptured. Rather, within the two year period for broadening reissues, Appellant recognized that the material being non-metallic for the claimed apparatus was in and of itself a separate invention without the need for any limitation on movement regulation. Claim 21 has no elements for movement regulation whatsoever. In order for the recapture rule to apply to claim 21 it would have to have a movement regulation feature but no limitation on rate regulation or no other new limitations on the movement regulation feature that would otherwise narrow that feature to scope narrower than now recited in claims 1 or 15 after they were amended when rejected over the '070 O'Brien patent. Finally, it is worth noting that the Examiner has never rejected claim 21 on the art, despite two opportunities to do so. This fact is further recognition by the Examiner that claim 21 recited a separate invention not found by him in the prior art. Since the recapture rule does not apply to claim 21, it and all the claims dependent from it should be allowed.

The recent cases from the Federal Circuit on the rule of recapture are uniform in their support of Appellant's position, stated above, that complete elimination of the amended element in the previous patent, if done within 2 years of the original patent issue, is permissible under 35 U.S.C. § 251 as an effort to claim a different invention rather than recapturing something surrendered before. These cases uniformly apply recapture when the same element previously narrowed is still in the claims for reissue in a broader form, caused by deleting prior amendments that were relied upon to avoid the prior art, or caused by failure to add new limitations to the previously amended element that meaningfully narrow it.

In *Pannu v. Storz Instruments Inc.*, 258 F3d 1366, 59 USPQ2d 1597 (Fed. Cir. 2001) involved an intraocular lens that included haptics for attachment to the tissue. In the original patent narrowing amendments were made to the shape of the haptics. In the reissue, the haptics were still in the claim but without the narrowing limitations added by amendment to get the original patent. While narrowing elements were added to the reissue claim, they did not pertain to the haptic shape; rather, they referred to another element, the snag resistant means. Held, the reissue claims violated the rule of recapture.

In *In re Clement* 131 F3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997) the original method claims were amended to narrow them over the prior art. In the reissue several limitations that were added to the method steps to get the original patent to issue were removed. Certain temperature limitations, pH values and energy input requirements were no longer components of the same underlying steps of the method. The holding was that the claim was broader rather than narrower in a manner directly pertinent to the subject matter that the inventor surrendered during prosecution, in violation of the recapture rule.

In *Hester Indus., Inc v. Stein*, 142 F3d 1472, 46 USPQ2D 1641 (Fed. Cir. 1998) the patents related to a high humidity steam cooker. To get the original claims to issue amendments were made to get around the prior art emphasizing, as to the steam, that there were two sources and that the cooking was accomplished solely with steam, as opposed to other types of heat sources. In the reissue claims, steam was still an element but the limitations as to it being the sole source and that there had to be two inputs of steam were removed. Other purported narrowing limitations to the reissue claims were held not to be limitations at all. For example, substituting “high humidity steam” was held broader than the term “ at near 100% humidity 100 C. and a pressure above atmospheric” that it replaced. A violation of the recapture rule was found.

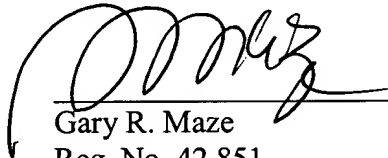
In *Mentor Corp. v. Colorplast Inc.* 998 F.2d 992; 27 U.S.P.Q.2D (BNA) 1521(Fed. Cir. 1993) the original claims for a penile catheter included an element that an adhesive was transferred from an inner to an outer layer. The transfer feature was added to overcome prior art. In the reissue claims the adhesive was an element but the transfer feature was eliminated. The claimed narrowing did not prevent the application of the recapture rule because the asserted newly added limitations did not really limit the claim, like substituting “flexible” for “resilient” or adding a limitation that was already in the prior art and did not relate to the element that was narrowed originally.

In conclusion, the Examiner admits that no prior art calls into question the allowability of claim 21. The only issue is the Examiner’s misplaced application of the recapture rule to a wholly different invention that no longer has movement regulation as a feature. More specifically, with regard to claim 23, where movement regulation is a feature, it is presented in a narrower form than in the previously granted claims 1 and 15

feature, it is presented in a narrower form than in the previously granted claims 1 and 15 in the '496 patent and it still contains other limitations not found in claims 1 and 15, making the recapture rule inapplicable for another independent reason. In short, anything that the Examiner contends was surrendered is not the subject of recapture by virtue of elimination of the previously amended element altogether from claim 21. Allowance of all the claims is respectfully requested.

Respectfully submitted,

8/8/03
Date



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CERTIFICATE OF MAILING 37 CFR 1.10

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Tracie Thigpen

APPENDIX

1. An apparatus for selective pressure build-up in a tubular, comprising:
 - a seat assembly comprising a seat supported by a movable body, said seat adapted to receive a member thereon to obstruct the tubular for pressure build-up;
 - said seat assembly movable between a first position, where the tubular may be obstructed by said member, and a second position, where flow past said seat and member can occur; and
 - a movement-regulating device operable on said seat assembly to selectively regulate the rate of movement from said first to said second position.
2. The apparatus of claim 1, wherein:
 - said regulating device prevents movement of said seat assembly until a predetermined range of applied pressure is exerted on said seat assembly.
3. The apparatus of claim 2, further comprising:
 - a housing defining a fluid chamber adjacent said seat assembly; said seat assembly movably mounted to said housing such that movement of said seat assembly changes the volume of said fluid chamber.
4. The apparatus of claim 1, wherein:
 - at least one portion of said seat assembly is nonmetallic.
5. The apparatus of claim 4, wherein:
 - the entire seat assembly is nonmetallic.
6. An apparatus for selective pressure build-up in a tubular, comprising:

a seat assembly comprising a seat supported by a movable body, said seat adapted to receive a member thereon to obstruct the tubular for pressure build-up;

said seat assembly movable between a first position, where the tubular may be obstructed by said member, and a second position, where flow past said seat and member can occur; and

a movement-regulating device operable on said seat assembly to selectively regulate movement from said first to said second position;

said regulating device prevents movement of said seat assembly until a predetermined range of applied pressure is exerted on said seat assembly;

said seat assembly is made of at least a first and second component;
said first component releasably engaged to said second component;

said first component interacting with said regulating device for control of movement of said seat assembly;

whereupon failure of said first component to move sufficiently toward said second position, a build-up of pressure on said seat, above said predetermined range, separates said first and second components to reestablish flow in the tubular.

7. An apparatus for selective pressure build-up in a tubular, comprising:

a seat assembly comprising a seat supported by a movable body, said seat adapted to receive a member thereon to obstruct the tubular for pressure build-up;

said seat assembly movable between a first position, where the tubular may be obstructed by said member, and a second position, where flow past said seat and member can occur; and

a movement-regulating device operable on said seat assembly to selectively regulate movement from said first to said second position;

said regulating device prevents movement of said seat assembly until a predetermined range of applied pressure is exerted on said seat assembly;

a housing defining a fluid chamber adjacent said seat assembly;

said seat assembly movably mounted to said housing such that movement of said seat assembly changes the volume of said fluid chamber.

8. The apparatus of claim 7, wherein:

said removable barrier comprises a rupture disc.

9. The apparatus of claim 7, wherein:

said outlet comprises a flow restrictor to regulate fluid flow rate out of said fluid chamber to facilitate regulated movement of said seat assembly toward its said second position.

10. The apparatus of claim 9, wherein:

said housing comprises at least one lateral port and inlet;

said seat assembly mounted in said inlet and in its said first position blocking said port;

whereupon pressure build-up to said predetermined range, said seat assembly creates fluid pressure in said fluid chamber to remove said removable barrier so that said seat assembly can move toward its said second position;

whereupon said port is opened to reestablish flow in the tubular.

11. The apparatus of claim 10, wherein:

said port has a shape which creates an open area which increases disproportionately with increasing translational movement of said seat assembly.

12. The apparatus of claim 9, wherein:

said seat assembly is made of at least a first and second component;

said first component releasably engaged to said second component;

said first component forming a part of said fluid chamber;

whereupon failure of said first component to move sufficiently toward said second position to uncover said port, a build-up of pressure on said obstructed seat, above said predetermined range, separates said first and second components to reestablish flow in the tubular.

13. The apparatus of claim 12, wherein:

said seat is mounted on a sleeve which defines said second component;

said first component comprises a piston with respect to said cavity, having a bore therethrough to allow a member to pass therethrough and sealingly land on said seat;

said piston connected to said sleeve by a breakable member for tandem movement until an applied pressure beyond said predetermined range is applied to said sleeve;

whereupon failure of said piston to move toward said second position, said sleeve separates from said piston as said breakable member breaks.

14. The apparatus of claim 13, wherein:

said breakable member comprises at least one shear pin.

15. An apparatus for selective pressure build-up in a tubular, comprising:

a housing;

a seat assembly mounted to said housing and defining a fluid chamber, said fluid chamber having an outlet and an obstructing member in said outlet;

said seat assembly further comprising a seat which, when obstructed and subjected to a predetermined range of pressure within the tubular, causes said seat assembly to, in turn, increase fluid pressure in said chamber to overcome said obstructing member, which allows movement of said seat assembly at a controlled rate from a first position, where the tubular is obstructed, to a second position, where flow past said seat assembly is established.

16. The apparatus of claim 15, wherein:

said obstructing member further comprises a flow restriction member in said outlet.

17. An apparatus for selective pressure build-up in a tubular, comprising:

a housing;

a seat assembly mounted to said housing and defining a fluid chamber, said fluid chamber having an outlet and an obstructing member in said outlet;

said seat assembly further comprising a seat which, when obstructed and subjected to a predetermined range of pressure within the tubular, causes said seat assembly to, in turn, increase fluid pressure in said chamber to overcome said obstructing member, which allows movement of said seat assembly from a first position, where the tubular is obstructed, to a second position, where flow past said seat assembly is established;

said obstructing member comprises a rupture disc.

18. An apparatus for selective pressure build-up in a tubular, comprising:

a housing;

a seat assembly mounted to said housing and defining a fluid chamber, said fluid chamber having an outlet and an obstructing member in said outlet;

said seat assembly further comprising a seat which, when obstructed and subjected to a predetermined range of pressure within the tubular, causes said seat assembly to, in turn, increase fluid pressure in said chamber to overcome said obstructing member, which allows movement of said seat assembly from a first position, where the tubular is obstructed, to a second position, where flow past said seat assembly is established;

said seat assembly comprises a piston having a bore therethrough and a sleeve releasably secured to said piston;

said piston forming a portion of said chamber, said bore allowing an obstructing member to pass through said piston and sealingly engage said seat;

whereupon if said piston fails to move sufficiently toward its said second position, application of pressure beyond said predetermined range of pressure causes said sleeve with said seat obstructed to break away from said piston to allow flow through the tubular.

19. An apparatus for selective pressure build-up in a tubular, comprising:

a housing;

a seat assembly mounted to said housing and defining a fluid chamber, said fluid chamber having an outlet and an obstructing member in said outlet;

said seat assembly further comprising a seat which, when obstructed and subjected to a predetermined range of pressure within the tubular, causes said seat

assembly to, in turn, increase fluid pressure in said chamber to overcome said obstructing member, which allows movement of said seat assembly from a first position, where the tubular is obstructed, to a second position, where flow past said seat assembly is established;

said obstructing member further comprises a flow restriction member in said outlet; said obstructing member comprises a rupture disc;

said seat assembly comprises a piston having a bore therethrough and a sleeve releasably secured to said piston;

said piston forming a portion of said chamber, said bore allowing an obstructing member to pass through said piston and sealingly engage said seat;

whereupon if said piston fails to move sufficiently toward its said second position, application of pressure beyond said predetermined range of pressure causes said sleeve with said seat obstructed to break away from said piston to allow flow through the tubular.

20. An apparatus for selective pressure build-up in a tubular, comprising:

a seat assembly comprising a seat supported by a movable body, said seat adapted to receive a member thereon to obstruct the tubular for pressure build-up;

said seat assembly movable between a first position, where the tubular may be obstructed by said member, and a second position, where flow past said seat and member can occur; and

a movement-regulating device operable on said seat assembly to selectively regulate movement from said first to said second position;

the entire seat assembly is nonmetallic;

a substantial portion of said movement-regulating device is non-metallic.

21. An apparatus for selective obstruction on a tubular by holding an object placed thereon, to allow pressure buildup in said tubular, comprising:

a non-metallic body mounted in the tubular having a passage there-through and further comprising a seat surrounding said passage to accept the object, to allow for selective pressure buildup above said body, said non-metallic construction of said body facilitating rapid removal thereof for subsequent full bore access through the tubular.

22. The apparatus of claim 21, wherein:

said body is made from a plurality of non-metallic components movable with respect to each other responsive to a predetermined force on the object when engaged to the said seat.

23. The apparatus of claim 22, wherein:

relative movement of said non-metallic components is regulated by displacement of fluid from a cavity, defined at least in part by said components, through an outlet which presents a flow restriction.

24. The apparatus of claim 23, wherein:

said cavity is formed, at least in part, by the tubular.

25. The apparatus of claim 23, wherein:

one of said components comprises a housing secured to the tubular, another of said components comprises a piston, said cavity defined between said piston and said housing, said restriction is defined by said housing as an outlet in communication with said cavity, said cavity varies in volume upon piston movement.

26. The apparatus of claim 25, wherein:

said piston exposes a bypass passage upon a predetermined movement.

27. The apparatus of claim 26, wherein:

said bypass passage increases in open area at a higher rate as said piston is displaced.

28. The apparatus of claim 25, wherein:

said piston is in two pieces which are selectively held by a breakable member;

whereupon pressure buildup to a predetermined level, a portion of said piston with said seat and the object in contact therewith can be expelled through said housing.

29. The apparatus of claim 24, wherein:

said components comprise a stationary component supported by the tubular and a movable piston extending sealingly and movably through an opening in said stationary component,

said movable piston contacting the tubular to define said cavity as an annular shape around said piston; and

said restriction is mounted to said housing.

30. The apparatus of claim 29, wherein:

said seat is secured to said piston by a breakable member;

whereupon pressure buildup to a first level on said seat, with the object engaged to it, displaces said piston with said seat to reduce the volume of said cavity by fluid displacement through said restriction, while a further pressure buildup breaks said breakable member to allow said seat and the object to be expelled from a passage in said piston.

31. The apparatus of claim 23, wherein:

said restriction comprises a rupture disc.

32. The apparatus of claim 23, wherein:

said restriction comprises an orifice.

33. The apparatus of claim 31, wherein:

said restriction comprises an orifice.

34. The apparatus of claim 21, wherein:

said body comprises an external thread for mounting to the tubular.

35. The apparatus of claim 21, wherein:

said seat is made from a ceramic material.

36. The apparatus of claim 21, wherein:

said body is made from one or more of plastic, epoxy, or phenolic materials.

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